

ELECTRONIC TUBE REFERENCE

6ER5

Voltage - Triode (single high frequency) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TRIODE

High-mu frame-grid triode used as an RF amplifier in VHF television tuners.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7FP	BASE PINS	7
NOMINAL HEATER	6.3 V / 180 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7FP - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – K	A	K – Cathode	CONNECTED
PIN2 – G1	A	G1 – Control Grid	CONNECTED
PIN3 – H	–	H – Heater	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – P	A	P – Plate (Anode)	CONNECTED
PIN6 – IS	A	IS – Internal Screen	CONNECTED
PIN7 – K	A	K – Cathode	CONNECTED

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	8000 Ω
TRANSCONDUCTANCE	0.0105 S
AMPLIFICATION FACTOR	80
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	100 V
MAXIMUM PLATE DISSIPATION	2.5 W
MAXIMUM SCREEN DISSIPATION	0.5 W
MAXIMUM CATHODE CURRENT	25 mA
MAXIMUM HEATER-CATHODE VOLTAGE	100 V
<i>Published promoted fields populated from the printed semantic headings.</i>	

High-mu frame-grid triode used as an RF amplifier in VHF television tuners.

SOURCE OPERATING CONDITIONS

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1950 Sylvania

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1950 SYLVANIA

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage..... 2.3 2.8 6.3 Volts	6.3 V	Heater Voltage..... 2.3 2.8 6.3 Volts
Heater Current..... 600 450 180 Ma	180 mA	Heater Current. 600 450 180 Ma
Output. ... oo i e 4.0 3.0 puf	3 pF	Output. ... oo i e 4.0 3.0 puf
Plate Voltage.t 200 Volts	200 V	Plate Voltage.t 200 Volts
Grid Voltage.cooiiii i e -1.2 Volts	-1.2 V	Grid Voltage.cooiiii i e -1.2 Volts
Plate Current. i iiinnennnn 10 Ma	10 mA	Plate Current. i iiinnennnn 10 Ma
Transconductance.covvtinen v enennnnn 10,500 umhos	10.5 umhos	Transconductance.covvtinen v enennnnn 10,500 umhos

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Supply Voltage.coovin e 550 Volts Max.	550 V	Supply Voltage.coovin e 550 Volts Max.
Plate Voltage.c.oiiinii ... 250 Volts Max.	250 V	Plate Voltage.c.oiiinii ... 250 Volts Max.
Plate Dissipation. iiienon.. 2.2 Watts Max.	2.2 W	Plate Dissipation. iiienon.. 2.2 Watts Max.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode Current. 20 Ma Max.	20 mA	Cathode Current. 20 Ma Max.
Negative Grid Voltage. 50 Volts Max.	50 V	Negative Grid Voltage. 50 Volts Max.


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1961 Tung Sol

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1961 TUNG SOL Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	8000 ohm	Typical
Transconductance	10500 uS	Typical
Amplification Factor	80	Typical


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1963 Amperex Condensed

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1963 AMPEREX CONDENSED Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	Published table
Control-grid bias	-1.2 V	Published table
Plate current	10 mA	Published table

Characteristic		
Parameter	Published Value	Condition / Note
Transconductance	10500 μ S	Published table
Amplification factor	80	Published table
Heater voltage	6.3 V	Published heater rating
Heater current	180 mA	Published heater rating



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1966 Tung Sol Electronic Tubes 2 of 4

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

Section 1 · Triode

Other		
Parameter	Published Value	Condition / Note
Maximum_supply_voltage	550 V	—
Maximum_negative_grid_voltage	50 V	—
Maximum_grid_circuit_resistance	1 megohm	—
Plate_voltage	200 V	ClassA
Grid_1_voltage	-1.2 V	ClassA
Grid_2_voltage	0 V	ClassA

Characteristic		
Parameter	Published Value	Condition / Note
Plate_current	10 mA	ClassA
Grid_2_current	0 mA	ClassA

Capacitance		
Parameter	Published Value	Condition / Note
Input capacitance	4.4 pF	—
Output capacitance	4 pF	—
Plate-to-grid capacitance	0.36 pF	—
Cathode-to-grid capacitance	3.1 pF	—

SOURCE OPERATING CONDITIONS

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1971 RCA HB3 Binder 4 of 7

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1971 RCA HB3 BINDER 4 OF 7

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	200 V	ClassA
Plate current	10 mA	ClassA
Maximum plate voltage	330 V	—
Grid to heater – published value 1	0.28 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid to heater – published value 2	0.28 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
PLATE VOLTAGE	250 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Negative-bias value	50 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
CATHODE CURRENT	20 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
PLATE DISSIPATION – published value 1	2 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
PLATE DISSIPATION – published value 2	2 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater negative with respect to cathode	100 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater positive with respect to cathode	100 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-Circuit Resistance	1 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	8000 ohm	ClassA
Transconductance	10500 uS	ClassA
Amplification factor	80	ClassA
Voltage (AC or DC)	63 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Current	180 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
shield, and heater – published value 1	4.4	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
shield, and heater – published value 2	4.4	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
shield, and heater	3	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Plate to cathode – published value 1	0.24	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Plate to cathode – published value 2	0.2	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Cathode to grid – published value 1	3.1	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Cathode to grid – published value 2	3.1	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater to cathode – published value 1	2.5	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Heater to cathode – published value 2	2.5	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	200 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Grid Voltage	-1.2 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Plate Resistance (Approx	8000 ohm	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Transconductance	10500	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Plate Current	10 mA	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
transconductance (μmhos) = 500 – published value 1	500 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
transconductance (μmhos) = 500 – published value 2	-3.8 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
transconductance (μmhos) = 100 – published value 1	100 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
transconductance (μmhos) = 100 – published value 2	-5.6 V	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 1 -Cathode – published value 1	1	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 1 -Cathode – published value 2	5	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 2 -Grid – published value 1	2	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 2 -Grid – published value 2	6	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 3 -Heater	3	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pin 4 -Heater – published value 1	4	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.
Pin 4 -Heater – published value 2	7	Published datasheet value; multiple numbers on one source row represent separate limits or operating conditions.



SOURCE OPERATING CONDITIONS

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1975 RCA RC30

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1975 RCA RC30

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 2.8	6.3 V	Published in approved 6ER5 target entry; Section1
Heater Current 0.45	180 mA	Published in approved 6ER5 target entry; Section1
Plate Voltage	250 V	Published in approved 6ER5 target entry; Section1
Grid Voltage, Negative-bias value	50 V	Published in approved 6ER5 target entry; Section1
Cathode Current	20 mA	Published in approved 6ER5 target entry; Section1
Plate Dissipation	2.2 W	Published in approved 6ER5 target entry; Section1
Grid Voltage	-1.2 V	Published in approved 6ER5 target entry; Section1
Plate Resistance (Approx.)	8000 Ω	Published in approved 6ER5 target entry; Section1
Transconductance	10500 μS	Published in approved 6ER5 target entry; Section1
Plate Current	10 mA	Published in approved 6ER5 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid Voltage (Approx.) for transconductance of 500 /xmhos	-3.8 V	Published in approved 6ER5 target entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate 0.38	0.36 pF	Published in approved 6ER5 target entry; Section1
Grid to Cathode, Heater, and Internal Shield . 4.4	4.4 pF	Published in approved 6ER5 target entry; Section1
Plate to Cathode, Heater, and Internal Shield . . 3	4 pF	Published in approved 6ER5 target entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid Voltage (Approx.) for transconductance of	100 μS	Published in approved 6ER5 target entry; Section1
Grid Voltage (Approx.) for transconductance of 100 /imhos	-5.6 V	Published in approved 6ER5 target entry; Section1

TUBE TINKER

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